Fourth GAIN World Conference
Paris, France
June 14-15, 2000

Future Directions

The Pilot View

Captain Ted Murphy
President
IFALPA

- International Federation of Air Line Pilots' Associations
  - 1948 (13 Associations)
- ICAO
- 95 Member Associations
  - 100,000 + Members
- ***"THE GLOBAL VOICE OF PILOTS"***
  - Reduce accidents to zero
  - A Single Level of Safety Worldwide

- INTERACTS WITH
  - International Civil Aviation Organisation (ICAO)
  - Joint Airworthiness Authorities (JAA)
  - Regional ICAO groupings - ECAC, AFCAC
  - Flight Safety Foundation (FSF)
  - Society of Automotive Engineers (SAE)
  - Airports Council International (ACI)
  - IFATCA
  - IATA (AEA/ATA)

The Pilot View

- IFALPA SUPPORTS
  - GAIN
  - FOQA
  - Operational Monitoring
  - Confidential Reporting
  - Non-punitive safety systems
  - Sharing of DATA

The Pilot View

- Annex 13 “Records should not be made available for purposes other than accident or incident investigation.”
  - Cali 757
  - Stage presentation - New York
  - New Zealand
  - Korea

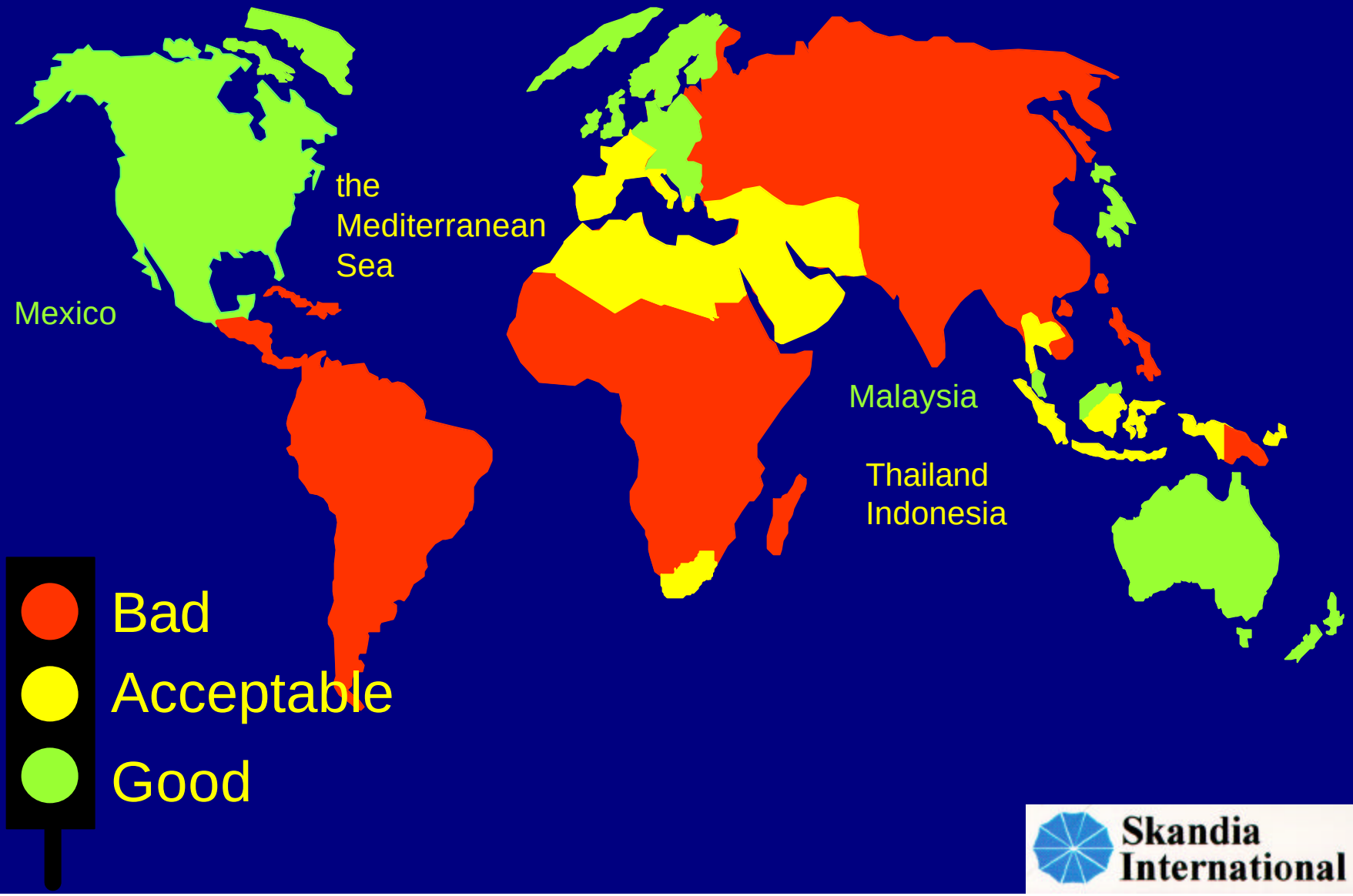
The Pilot View

- REALITY
  - 2-hour FDRs
  - 2-hour CVRs
  - Full cockpit video recorders
  - Guarantees?
  - Privacy laws?
  - Confidential reporting systems?
    - NASA/CHIRP
    - EUCARE?

The Pilot View

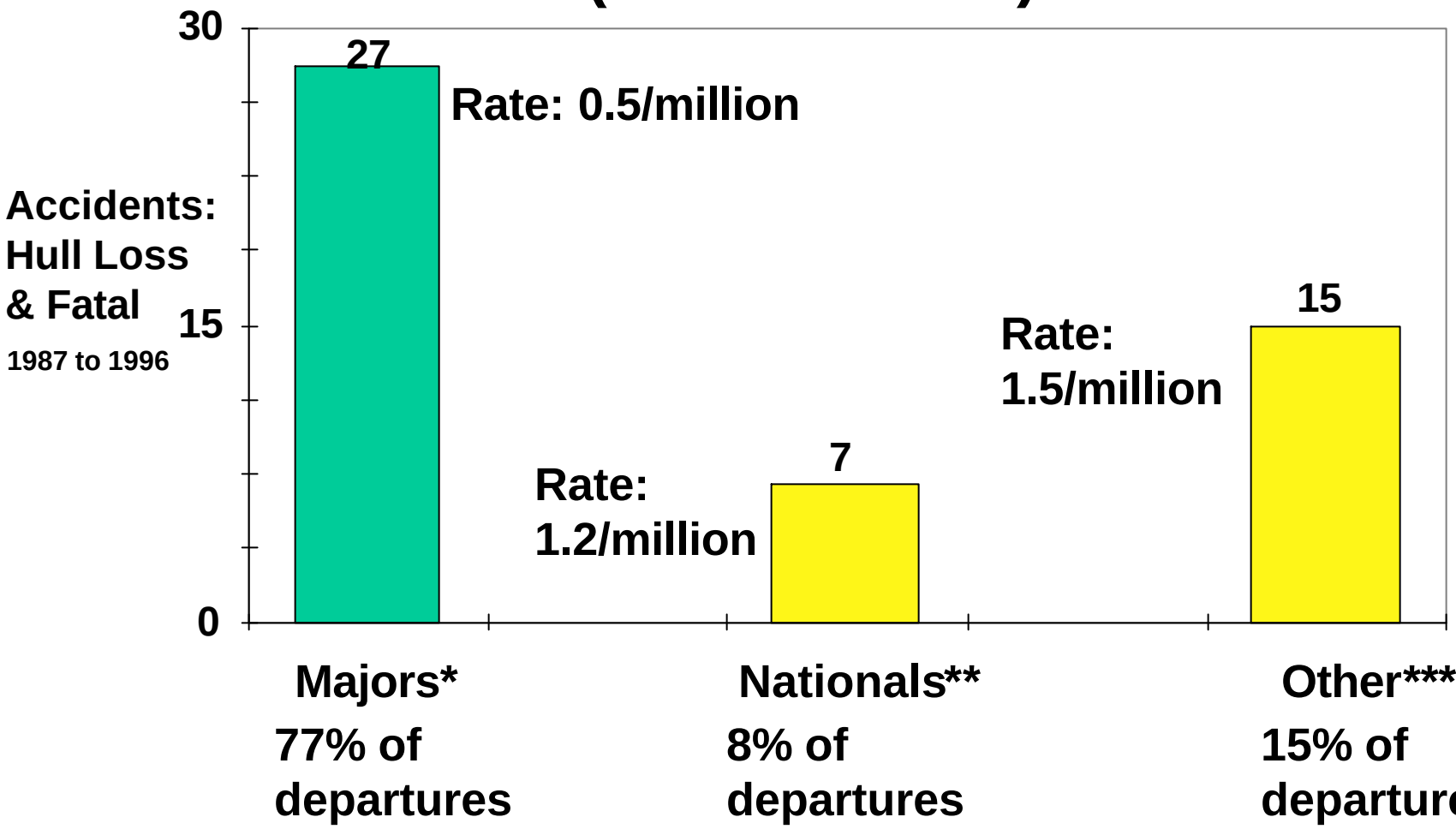
- 80 % of accidents / 20% of operations
- 60% of accidents = Controlled Flight Into Terrain/loss of control
- “Flights done by the developed world amounting to 88% of the total caused less accidents than the 12% flown by the third world”

Geographical Division



Skandia International

Accident Frequency Varies With Operator Size (United States)



* More than $1 billion revenue per year
** $100 million to $1 billion revenue per year
*** Less than $100 million revenue per year

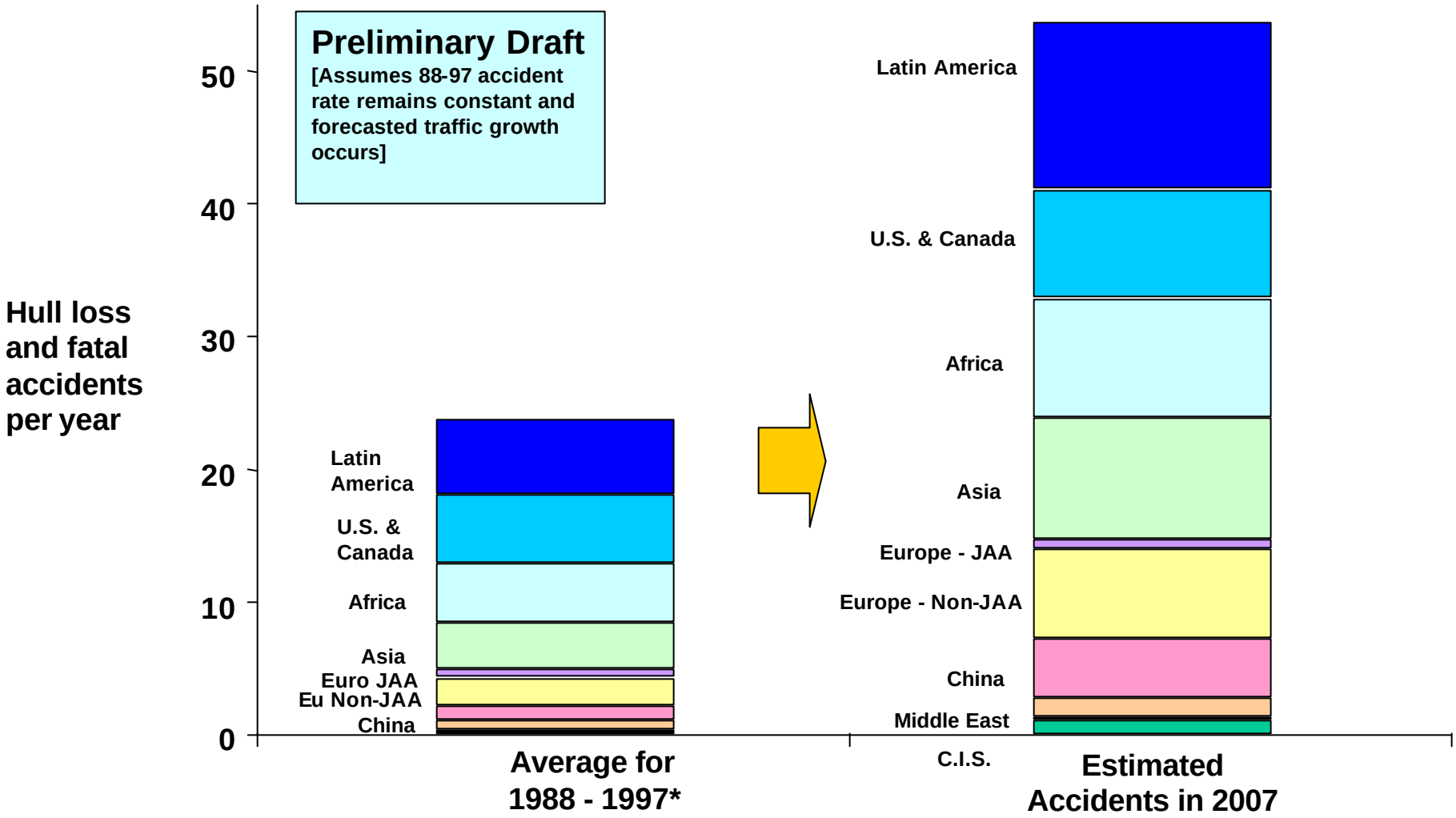
The Pilot View

- **Average fleet size**
  - North America 108 aircraft
  - Africa 11 aircraft

The Pilot View

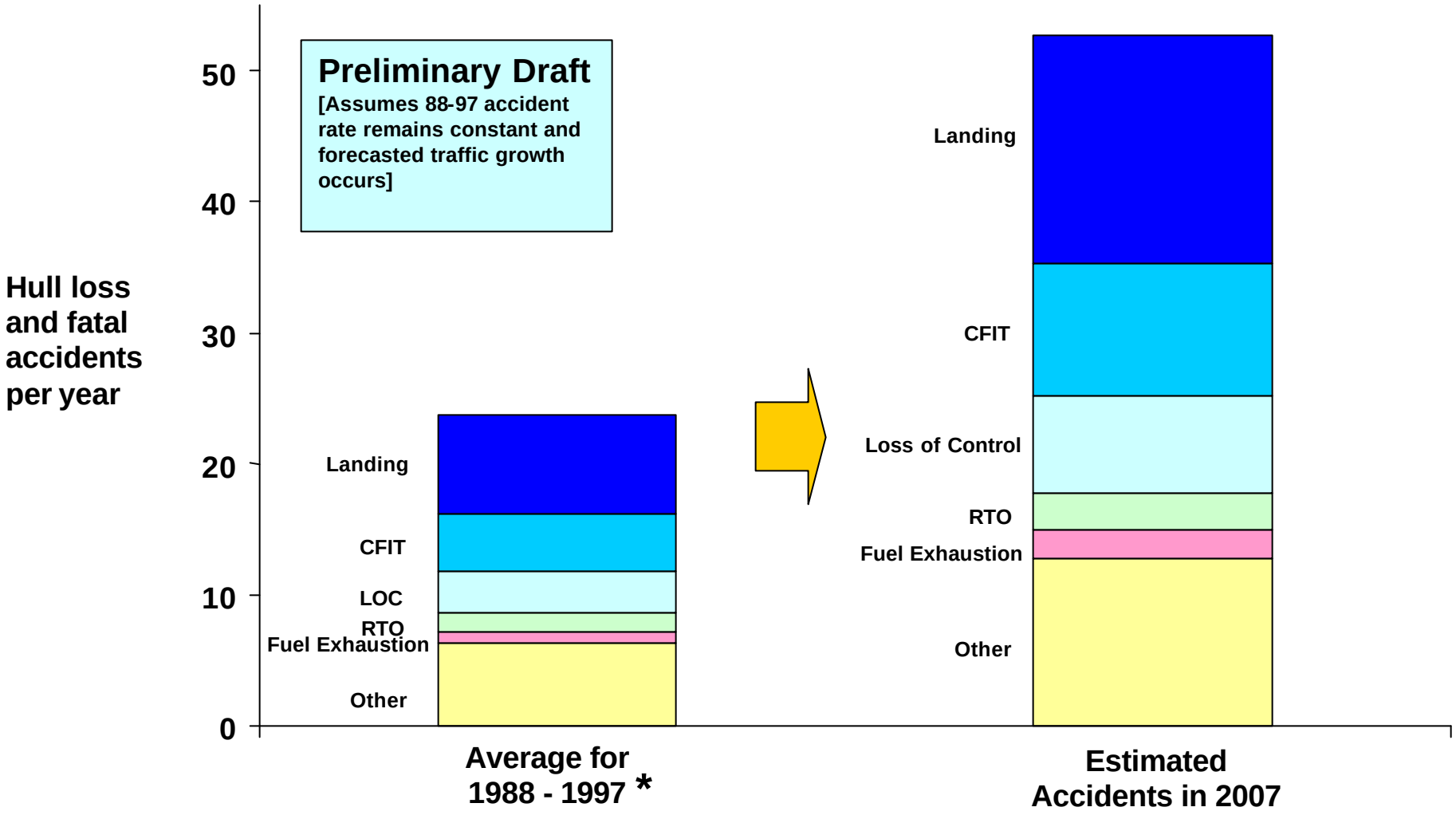
- ICAO Safety Oversight
  - GASP
- Reduce Accidents by Identifying Most Effective Means
- CAST-JSSI-PAAST-COSCAP

Regional/Worldwide Accidents Growth Projection



* Total hull loss and fatal accidents (1988 - 1997) = 237

Worldwide Accident Type Growth Rate



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The Pilot View

- UK CAP 681 - Global Fatal Accident Review
- 40% of accidents involved “non-fitment” of presently available safety equipment
- Failure in CRM
- Weather
- Inadequate Regulatory Oversight
- Company Management.

The Pilot View

- **Mortality Risk/Scheduled Ops/1987-1996**
- **Advanced World 1/8 Million**
- **US Commuter 1/2 Million**
- **Developing World 1/500,000**
- **Intl.Jet Ops**
- **-in Advanced World 1/5 Million**
- **-Advanced to Developed 1/600,000**
- **-Within Developed World 1/400,000**

The Pilot View

- ICAO AIG Divisional Meeting 1999
- Build on New Zealand success
- Referred to 2001 Assembly
- A worldwide system needs worldwide support and worldwide guarantees

The Pilot View

- ICAO
- FAA - JAA
- Boeing - Airbus
- Global Alliances

[redacted]

IFALPA

THE GLOBAL VOICE OF PILOTS

www.gobalpilot.org

THANK YOU

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An Engineer's View:
Future Direction for GAIN

Fred Bruggeman
AEI Secretary General
Netherlands

AIRCRAFT ENGINEERS INTERNATIONAL
"We Keep Them Flying ... Safely"

What is AEI?

AEI (Aircraft Engineers International) is a worldwide organization representing associations and unions of licensed aircraft engineers in 39 organizations in 28 countries. We represent some 38,000 engineers worldwide now. I am their elected Secretary General, on behalf of my own Union, “De UNIE”

What is our aim?

- **<u>Our aim as organizations</u>, both AEI and my own union, De UNIE, is to keep aviation a safe way of transport.**
- **<u>This means for us:</u>**

  Increase overall basic educational levels of mechanics and engineers, system knowledge, awareness, self esteem of our engineers, good procedures and working conditions, etc. This keeps us very busy in this fast-changing industry.

Do we really listen to all that is said here or do we only hear what we want to hear?

- **All that is said here in this conference is important although we might not want to hear it because it doesn't suit us.**

Safety is much more than "not having accidents"

Safety improving or maintaining is most of all risk-reducing:

- **By a way of looking at working methods.**
- **By having good back-up systems and procedures.**
- **Where system information is freely shared amongst colleagues and even between airlines and maintenance organisations for the sake of safety.**

Safety is much more than "not having accidents"

- **Where the attitude and behavior of managers is such that it encourages people to stand up and say or admit they have made a mistake.**

- **Where safety is regarded a higher priority than the percentage of aircraft leaving on time.**

Safety is much more than "not having accidents"

- **Where in company procedures it is good practice to check each other's work.**

- **Where engineers should be praised and receive a tap on the shoulder, if they do their work according procedures (sometimes causing delays).**

Today's Management Culture

- **Unfortunately for safety, today's management culture in many companies is one that makes managers accountable for the financial results of their department.**
- **They switch jobs often within 2 to 3 years.**
- **So why should they invest (of their budget) in something they will never benefit from?**

If you think safety is expensive, try having an accident!

Every accident of an aircraft is seen in the eyes of the passenger, as something that might happen to him / here one day.

That aviation "seems" less safe (because of growing numbers of accidents) due to the growth of aviation as such, is not taking into account by this passenger.

It is the growth of aviation that will cause a major accident every week in a few years from now, not reduced safety levels as such. So increased safety will pay back.

Negative Safety Effects of Economics

- **Short turnaround times, to increase companies productivity and reduce total flying time on multiple stretch flights, do not ask for serious troubleshooting, they call for the (lead ball) shotgun approach, to make the aircraft ready for just another flight, instead of good trouble shooting practices that need troubleshoot time!**

Good Safety Practises and Good Economics

- **By sharing system problems and good solutions we can shorten troubleshoot times, we degrease ground- time and increase safety (and save a lot of money for the airlines).**
- **Save a lot of money by preventing "unnecessary" overhauling or servicing of rotable parts regarded as unserviceable for the sake of on time departure. These hidden costs can be very high but do not show in financial graphs of airlines or maintenance organizations.**

Where will we find GAIN benefits?

- **When introducing new types of aircraft into a company.**
- **With new groups of fresh trained engineer's entering a maintenance environment.**
- **Learn during aircraft-type course training and refresher training so this should contain experiences on this type of aircraft in our own environment and if possible anywhere else.**

Learning on your own or with help from others?

- **For the larger organizations there is some advantage of learning from within the own organizations but if we look at the statistics, we see that safety is very vulnerable especially within smaller or less financially strong organizations.**
- **Because of their smaller company or fleet size, these small organizations sometimes have more trouble solving complaints that do not follow the maintenance manual troubleshoot trees.**

Learning on your own or with help from others?

- **Maintenance manuals troubleshoot trees follow only normal paths, which most often solve the problem, so you can have systems malfunctions that exist for a long time and remain on the deferred defect list, thereby increasing risk for multiple system problems.**

Start Small to Prove Value

- **Even the information that is available in many maintenance organizations magazines is worthwhile of sharing worldwide. Making this available might have a direct positive effect on maintenance and safety records.**
- **To share this information, GAIN should have the trust of airlines by proving that information provided by airlines is safe for misuse against airlines or maintenance companies.**

GAIN Future

- In the future, Phase 2 or 3 of GAIN, it is hopefully made possible to go to the corner of a hangar anywhere in the world and type into the computer your system problem. The GAIN system would show you some solutions to similar system problems by showing that a certain plug has caused problems or some bleed line has the tendency to crack in certain places. It might give you a clue were to look before taking a system apart having an aircraft on ground for 2 days of troubleshooting.

The Scope of GAIN

- **In respect of the above we, as responsible people and organizations, have to think long-term and try to change this attitude and behavior.**
- **We might have some short-term results by introducing the GAIN system, but the long run is where the major benefits will show and that's what we are aiming for.**
- **I foresee a system (GAIN) where engineers can learn from their colleagues' experiences anywhere in the world.**

Thank you for your attention.
Fred Bruggeman
AEI Secretary General

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